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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,818	03/03/2004	Kuan-Chang Peng	MR3003-78	1511
4586	7590	07/19/2006	EXAMINER	
ROSENBERG, KLEIN & LEE 3458 ELLICOTT CENTER DRIVE-SUITE 101 ELLICOTT CITY, MD 21043			ARTMAN, THOMAS R	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/790,818

Applicant(s)

PENG, KUAN-CHANG

Examiner

Thomas R. Artman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 April 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 7-10 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 and 7-10 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 03 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Hatwar (US 6,696,177 B1).

Regarding claim 1, Hatwar discloses an OLED (Fig.9; col.2, lines 41-57; col.9, lines 48-59; col.14, lines 19-50), including:

- a) a first electro-conductive layer 220a,
- b) a plurality of emission layers 341a, 342, 343a, where the first emission layer 341a is contiguously disposed on a top surface of the first electro-conductive layer 220a (220b is optional, see col.4, lines 62-67), and the remaining emission layers 342, 343a are stacked on the first emitting layer in turn, and
- c) a second electro-conductive layer 230 is contiguously disposed on an upper most one 343a of the stacked emission layers, and
- d) having a supply voltage being connected between the first and second electro-conductive layers.

With respect to claim 7, Hatwar further discloses that the substrate 210 is transparent (col.9, line 49).

With respect to claim 8, Hatwar further discloses that each emission layer has at least one dopant provided therein (col.14, lines 19-50).

With respect to claim 9, Hatwar further discloses that the dopants are phosphorescent substances.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forrest (US 5,707,745) in view of Hatwar.

Forrest discloses an OLED (Fig.2A), including:

- a) a transparent substrate 37,
- b) a first electro-conductive layer 35 disposed on the substrate,
- c) a second electro-conductive layer 26I spaced from the first electro-conductive layer,

and

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d) a plurality of emitters 20, 21, 22, stacked one upon another between the first and second electro-conductive layers, each of the stacked emitters including:

e) an emission layer 20E having opposing first and second sides,

f) a hole transport layer 20H having a first side disposed contiguous the first side of the emission layer,

g) an electron transport layer 20T having a first side disposed contiguous the second side of the emission layer,

h) an electron injection layer 26 having a side thereof disposed contiguous a second side of the electron transport layer.

Forrest does not disclose a hole injection layer having a side thereof disposed contiguous a second side of the hole transport layer.

Hatwar specifically teaches the practice of forming a hole injection layer 220b (Fig.3) having a side contiguous to a hole transport layer 341a in an OLED for further improving electrical conductivity and improve operational device stability (col.4, line 62 through col.5, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the OLED of Forrest to include a hole injection layer having a side contiguous to a hole transport layer as taught by Hatwar in order to improve electrical conductivity and device stability.

*Response to Arguments*

Applicant's arguments with respect to claims 1 and 10 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hung (US 6,208,075 B1), the issued patent of U.S. application serial # 09/186,829, incorporated by reference in Hatwar at col.5, lines 2-4, which further teaches that the addition of a hole injection layer improves conductivity and device stability.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas R. Artman whose telephone number is (571) 272-2485.

The examiner can normally be reached on 9am - 5:30pm Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas R. Artman  
Patent Examiner

*TRA 7/13/06*

  
**EDWARD J. GLICK**  
SUPERVISORY PATENT EXAMINER